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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,138	11/25/2003	Kevin Li	944-015.003	9453
4955 7590 10/09/2007 WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			EXAMINER ADDY, ANTHONY S	
			ART UNIT 2617	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/723,138	Applicant(s) LI, KEVIN	
	Examiner Anthony S. Addy	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/29/2007</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 30, 2007 has been entered. **Claims 1-26** are pending in the present application.

### *Response to Arguments*

2. Applicant's arguments with respect to **claims 1-26** have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 2, 5, 6, 8, 9, 11, 13-14, 16-22 and 24-25 are rejected under 35 U.S.C. 102(a) as being anticipated by **Leinonen et al., U.S. Publication Number 2003/0176176 A1 (hereinafter Leinonen)**.

Regarding claims 1 and 22, Leinonen teaches an apparatus (*e.g. antenna system 1e & 1f*) (see abstract and Figs. 1c, 4 & 5), comprising: a first antenna (*antenna 12*) that facilitates reception of signals in at least a first frequency band (p. 4 [0057], p. 5 [0062] and Figs. 1c & 5); and a second antenna (*antenna 13*) that facilitates reception of signals in a second frequency band and at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Figs. 1c & 5), wherein tuning of the second antenna depends upon a signal type in at least the first frequency band or the second frequency band relayed to the second antenna (see p. 4 [0057] and p. 5 [0062]).

Regarding claims 17 and 24, Leinonen teaches system and a method (see abstract and Figs. 1c, 4 & 5), comprising: providing a first antenna (*antenna 12*) that facilitates reception of signals in at least a first frequency band (see p. 4 [0057], p. 5 [0062] and Figs. 1c & 5); providing a second antenna (*antenna 13*) that facilitates reception of signals in a second frequency band and at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Figs. 1c & 5); determining whether a signal in the second frequency band is desirably received by the second antenna; and tuning the second antenna to facilitate reception of a signal in at least the first frequency band received by the first antenna if the reception of a signal in the second frequency band is not desirable (see p. 4 [0057] and p. 5 [0062]).

Regarding claim 21, Leinonen teaches a method (see abstract), comprising: providing a mobile communication device that includes a first antenna (*antenna 12*) tuned to receive a signal in at least a first frequency band (see p. 4 [0057], p. 5 [0062] and Figs. 1c & 5) and a second antenna (*antenna 13*) tuned to receive signals in a

second frequency band and at least the first frequency band (see p. 4 [0057], p. 5 [0062] and Figs. 1c & 5); coupling the second antenna to a first switch (see p. 5 [0062] and Fig. 5); further coupling the first switch to one of a first tuning circuit that facilitates tuning the second antenna for reception of a signal in second frequency band and a second tuning circuit that facilitate tuning the second antenna for reception of a signal in at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5); coupling the second antenna to a second switch (see p. 5 [0062] and Fig. 5); and further coupling the second switch to one of first receiving component that facilitates one of processing, transduction, and modulation of a signal in the second frequency band and a second receiving component that facilitates one of processing, transduction, and modulation of a signal in at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claims 2, 13 and 20, Leinonen teaches all the limitations of claims 1 and 17. Leinonen further teaches a mobile telephone, further comprising tuning the second antenna to receive a signal in the second frequency band if a signal in the second frequency band is desirably received by the second antenna (see p. 4 [0057] and p. 5 [0062]).

Regarding claim 5, Leinonen teaches all the limitations of claim 1. Leinonen further teaches the apparatus, further comprising: a first tuning component that facilitates tuning the second antenna for reception of signals in the second frequency band; and a second tuning component that facilitates tuning the second antenna for

reception of signals in at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claim 8, Leinonen teaches all the limitations of claim 1. Leinonen further teaches the apparatus, further comprising: a first receiving component that facilitates at least one of transduction, modulation, and processing of a signal in at least the first frequency band received by the first antenna; and a second receiving component that facilitates at least one of transduction, modulation, and processing of a signal in the second frequency band (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claims 6 and 9, Leinonen teaches all the limitations of claims 5 and 8. Leinonen further teaches the apparatus, further comprising a RF switch that facilitates coupling the second antenna to one of the first tuning component and the second tuning component (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claim 11, Leinonen teaches all the limitations of claim 1. Leinonen further teaches the apparatus, further comprising a component that determines frequency of a signal desirably received by the second antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claim 16, Leinonen teaches all the limitations of claim 1. Leinonen further teaches the apparatus, further comprising: a first switch that couples one of a first tuning component and a second tuning component to the second antenna, wherein the first tuning component facilitates reception of a signal in the second frequency band on the second antenna and the second tuning component facilitates reception of a signal in at least the first frequency band received by the first antenna on the second

antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5); a second switch that couples one of a first receiving component and a second receiving component to the second antenna, wherein the first receiving component facilitates one of transduction, modulation, and processing of the signal in the second frequency band and the second receiving component facilitates one of transduction, modulation, and processing of a signal in at least the first frequency band received by the first antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5); and a control component that relays commands to at least one of the first switch and second switch to facilitate a desirable coupling, the coupling based at least in part upon a type of signal desirably received by the second antenna (see p. 4 [0057], p. 5 [0062] and Fig. 5).

Regarding claims 14, 18 and 19, Leinonen teaches all the limitations of claims 1 and 17. Leinonen further teaches a radiating element that is coupled to a transmission line, wherein length of the transmission line is selectable between at least two lengths and altering an electrical length of a resonating element associated with the second antenna to tune the second antenna (see p. 4 [0057] and p. 5 [0066]).

Regarding claim 25, Leinonen teaches all the limitations of claim 1. Leinonen further teaches the apparatus, wherein the first frequency band is a personal communication service band, a cellular band, a Korean personal communication band, or a China personal communication service band (see p. 4 [0057] and p. 5 [0062]).

5. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hong, U.S. Publication Number 2003/0125078 A1 (hereinafter Hong)** as applied to

claims 5 and 9 above, and further in view of **Braun et al., U.S. Patent Number 6,980,782 (hereinafter Braun)**.

Regarding claims 7 and 10, Leinonen teaches all the limitations of claims 5 and 9. Leinonen fails to explicitly teach the radio frequency switch being one of a PIN-diode, a micro electro-mechanical system switch, and a field effect transistor switch.

In an analogous field of endeavor, Braun teaches an antenna device for transmitting and receiving radio frequency waves installable in a communication device includes an antenna structure switchable between antenna configuration states, wherein an antenna switching unit may be PIN diode switches, GaAs field effect transistors (FET), or microelectromechanical system (MEMS) switches (see abstract, col. 11, lines 15-24 and Fig. 7a).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Leinonen with Braun, wherein the RF switch is one of a PIN-diode, a MEMS switch, and a FET switch, in order to electrically connect and disconnect antenna elements in parallel or in series with each other, or completely connect or disconnect one or more antenna elements to ground as taught by Braun (see col. 11, lines 15-24).

6. Claims 3, 4, 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Leinonen et al., U.S. Publication Number 2003/0176176 A1 (hereinafter Leinonen)** as applied to claims 1 and 22 above, and further in view of **Eggleston, U. S. Patent Number 6,414, 640 (hereinafter Eggleston)**.



Regarding claims 3, 4, 15 and 23, Leinonen teaches all the limitations of claims 1 and 22. Leinonen fails to explicitly teach the second antenna is a top-mounted inverted F-antenna and the inverted F-antenna exhibits circular polarization characteristics.

However, the use of a top-mounted inverted F-antenna exhibiting circular polarization characteristics is very well known in the art as taught for example by Eggleston. Eggleston teaches a top-mounted inverted F-antenna (TOPIFA) used in a mobile station, and wherein the top-mounted inverted F-antenna assembly exhibits circular polarization characteristics (see col. 3, lines 35-47, col. 3, lines 64-67, col. 5, lines 39-52 and Fig. 3). According to Eggleston, the antenna assembly is used in a mobile station operable pursuant to conventional cellular operation as well as to receive GPS signals used for positioning purposes and because of the circular polarization characteristics of the resultant antenna transducer, a relatively high antenna gain characteristic is provided by the antenna transducer (see col. 6, lines 29-41). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to implement the antenna assembly of Eggleston in the communication system of Leinonen, in order to realize a relatively high antenna gain characteristic.

7. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Leinonen et al., U.S. Publication Number 2003/0176176 A1 (hereinafter Leinonen)** as applied to claim 1 above, and further in view of **Balchunas et al., U.S. Publication Number 2006/0097171 A1 (hereinafter Balchunas)**.

Regarding claims 12 and 26, Leinonen teaches all the limitations of claim 1. Leinonen fails to explicitly teach a system, further comprising an emergency component

that automatically configures the second antenna to receive a signal in the second frequency band upon transmitting data to an emergency number and wherein the second frequency band is a global positioning band.

In an analogous field of endeavor, Balchunas teaches a GPS enabled wireless personal communication device, further comprising an emergency component that automatically configures the second antenna to receive a GPS signal upon transmitting data to an emergency number (see p. 5 [0045 & 0047] and Fig. 3; shows an automatic dialer 335 [i.e. reads on emergency component] that automatically configures antenna 375 to receive a GPS signal).

It would therefore have been obvious to one of ordinary skill in the art at the of the invention to modify Leinonen with the teachings of Balchunas, in order to enable various communications without user interface, such as autodialing using an automatic dialer module to dial the number of an emergency response center to report pertinent information regarding radiation levels and provide location specific information as taught by Balchunas (see p. 5 [0044-0048]).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kojima et al., U.S. Patent Number 7,142,824 discloses an antenna device with first and second antenna.

Vuorio et al., U.S. Patent Number 6,535,748 discloses wireless communication transceiver having a dual mode of operation.


Leinonen et al., U.S. Patent Number 6,826,391 discloses transmission and reception antenna system for space diversity reception.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc M. Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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